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## (54) ANTENNA TRANSMISSION AND RECEPTION SYSTEM

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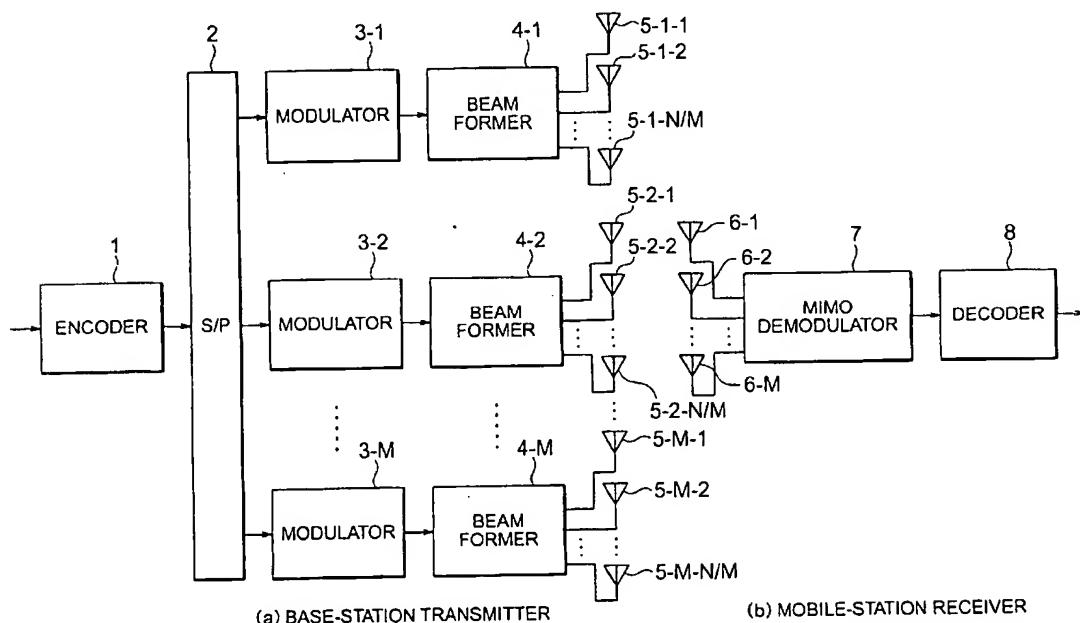
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## (57) ABSTRACT

A transmitter of a base station includes a data serial-to-parallel converter, M modulators, M beam formers, and transmission antennas. The data serial-to-parallel converter converts transmission data into M sequences. Each modulator modulates the transmission data. Each beam former weights the modulation signal to form directional beams. The transmission antennas narrow the beams and transmit the modulation signals in parallel (MIMO transmission). In a mobile station, a receiver has reception antennas for receiving data transmitted in parallel and an MIMO demodulator for demodulating the data.

weights  
mod  
narrowed



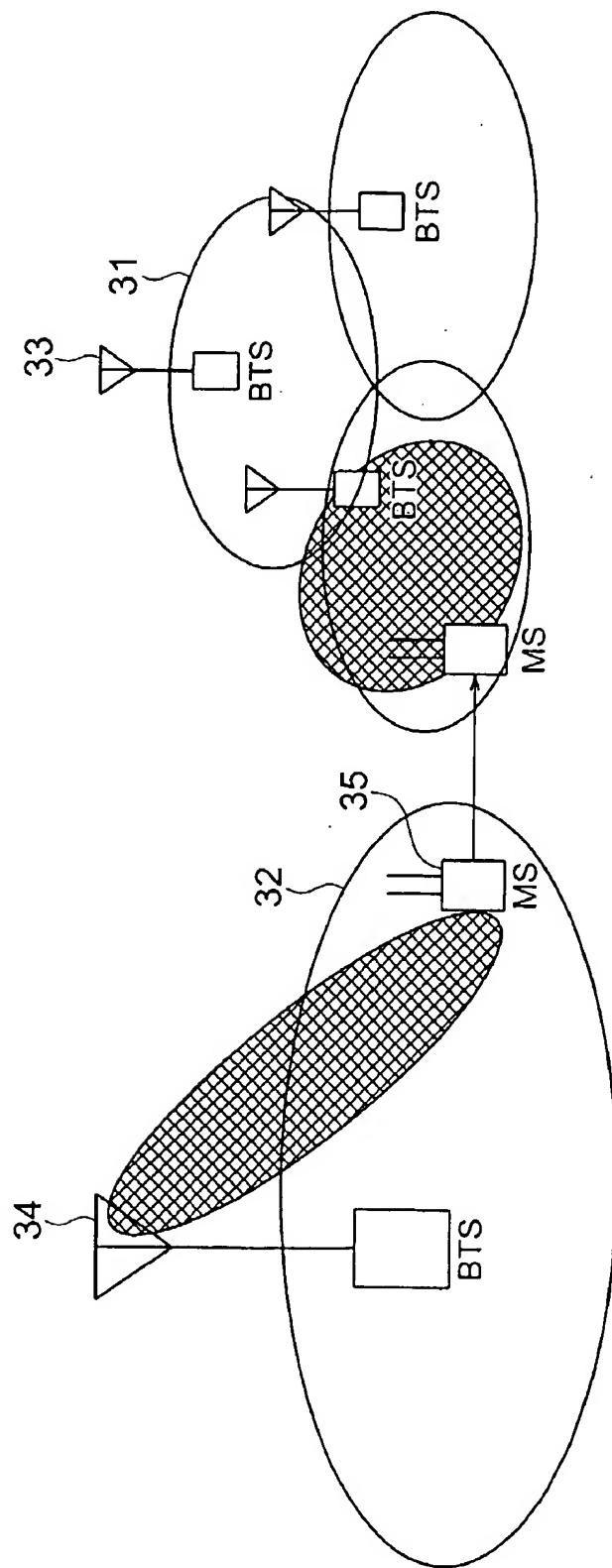


FIG. 14